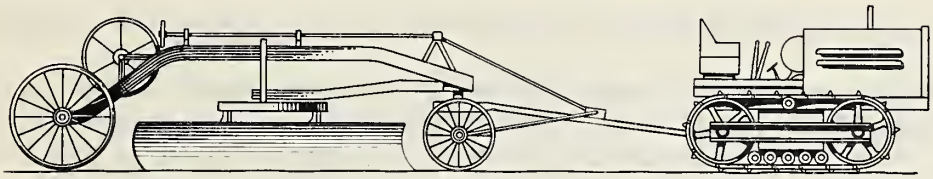
CONSTRUCTION



HINTS

UNITED STATES DEPARTMENT OF AGRICULTURE, FOREST SERVICE

WASHINGTON, D.C.

Vol. 3 January 23, 1937 No. 2

CONSTRUCTION OF BLUE PRINT RACK

Submitted by J. S. Groupe Jr., Camp Superintendent, ECW Camp S-127.
(See Page 4 for plan.)

The rack is made of 1" x 3" White Pine lumber surfaced on four sides. It is put together with 8d nails and corrugated fasteners.

The front edges of the rack are lined with brass hooks to hold the binders. The binders are made by placing together two pieces of 3/8" x 3/4" wood so that you have a finished cross-section of 3/4" square. The two pieces are held together by 1/8" x 1" round-head stove bolts.

When hanging a print the two pieces are taken apart and the ppint punched and placed between the two pieces of wood and then fastened together again.

This rack keeps the prints in a hanging position all the time and if ever they are wanted they can easily be lifted off the rack and laid on the table and can be gotten easily if the names of the prints are placed on the binders.

The use of this rack prevents the prints and drawings, especially plans and profiles, from becoming wrinkled and rolled and simplifies the finding of them.

We have found that this system of filing the prints is not only satisfactory, but very efficient and a time saver. It has kept them in a clean and well-preserved state. The rack covers a floor space of only four and one-half square feet and, therefore, is not in the way.

WELDING CRACKED VALVE SEATS IN CAST IRON CYLINDER HEADS

By
Melvin Myrin, Mechanic & Welder
Wisconsin ECW, Antigo, Wisconsin

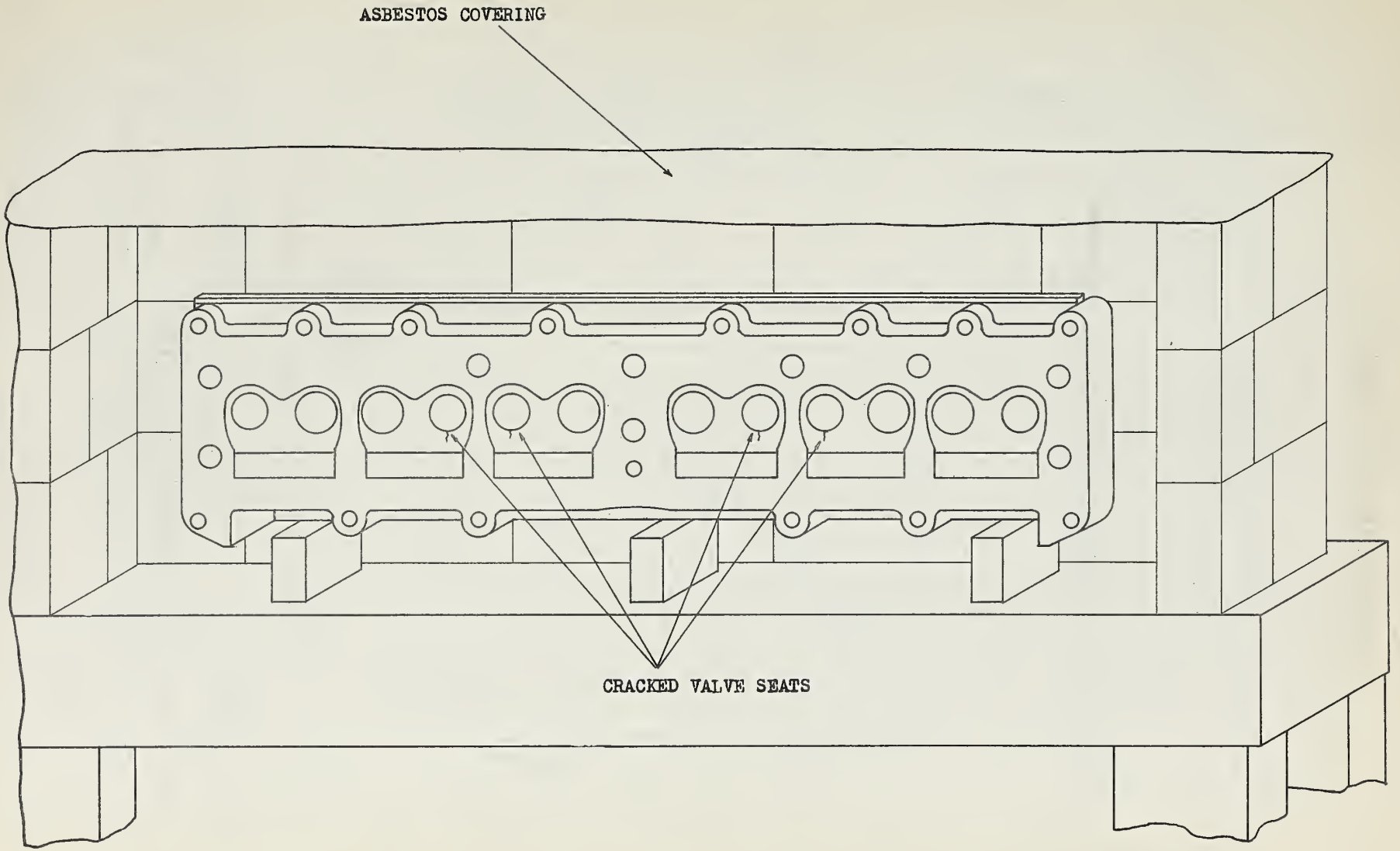
(For use in shop practice where handling facilities are available.)

Fusion welding of cast iron cylinder heads can be done. It does not differ from the welding of any other casting of a complicated nature. With a little care and the right procedure, this type of welding can be done easily and with no danger of hard-spots being formed in the weld. Two methods may be used; the Torch Preheating method and the Charcoal Preheating method.

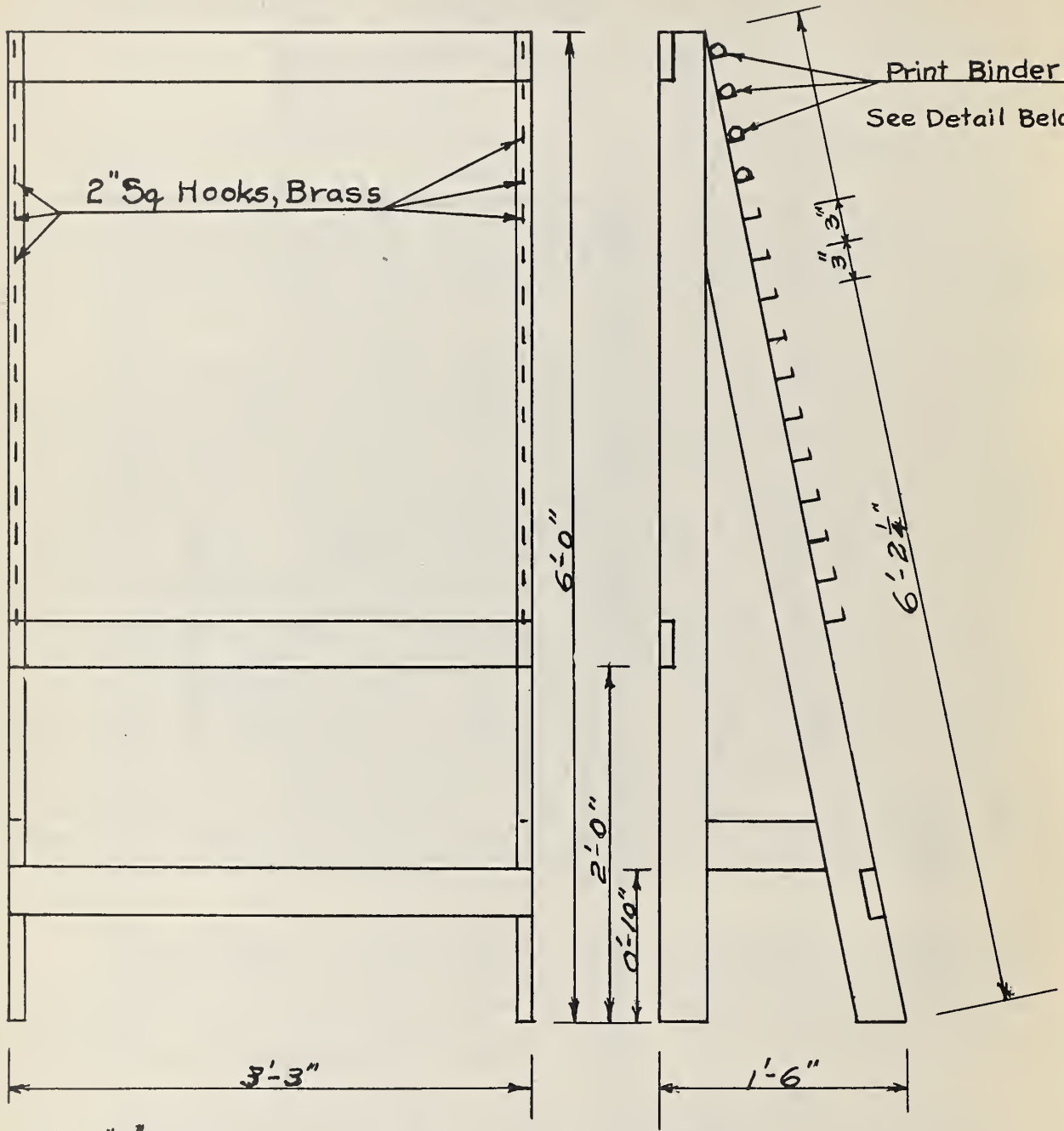
The illustration on Page 3 shows the Torch Preheating method, with the head placed on a brick table and supported by two or three bricks. An enclosure of fire brick is built around three sides of the head leaving the valve seats exposed. A sheet of asbestos paper serves as a top or roof of this construction. Preheating is accomplished with a torch using used motor oil or kerosene as fuel in conjunction with about two hundred pounds of compressed air. When the head is red-hot, it is quickly and completely covered with small pieces of asbestos paper. Small pieces are used for convenience in welding and eliminates the danger of exposing other parts of the head to drafts of air. When one seat is welded, quickly replace the paper and proceed to the next valve seat. When all the valve seats are welded, remove all the asbestos paper in front of the head and re-heat again to the red-hot stage using the preheating torch. Then cover the head completely with asbestos paper and leave until thoroughly cooled. It is of utmost importance that during the entire operation the temperature of the head be maintained at the same degree, hence the necessity of fast work and care so as not to expose the head to cold and drafts. With the exception of the cooling, this method takes about twenty minutes time. An ordinary valve seat reamer can then be used to refinish the seats and the head is ready for additional service.

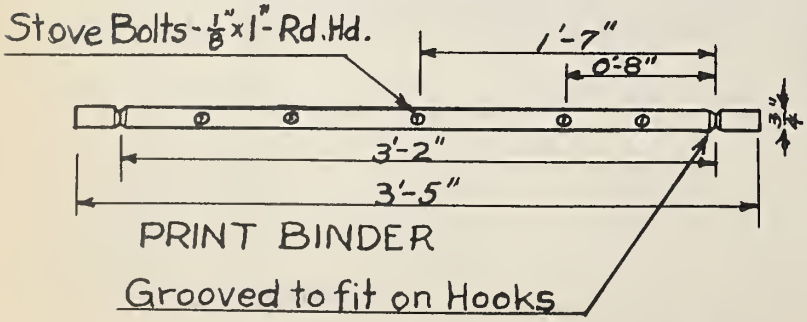
In the Charcoal Preheating method the same procedure is observed with the exception that the cylinder head is bricked in on all four sides with charcoal packed around the head. Place the head with valve ports up. Light the charcoal with a welding torch. This method, with the exception of the cooling, takes approximately two hours.

Any additional information or details regarding these two methods of welding cylinder heads will be furnished upon request.


ASBESTOS COVERING
CRACKED VALVE SEATS

BLUE-PRINT RACK





Material for Rack—
1"x3" W.P. S-4-S.

Material for Binders—
⅜"x¾" S-4-S

Drawn Dec. 4, 1936- Chas. W Beagle
Rauchtown, Pa. - Engineer Camp S-12